Hanford Reach
Hanford Site Employee News
October 28, 2002

Research-generated spent fuel moved

Michele Gerber, Fluor Hanford

The Spent Nuclear Fuel Project has successfully moved 101 spent fuel assemblies from an old research reactor to safe storage in the Interim Storage Area outside of the Canister Storage Building in Hanford's 200 East Area. The relocation, which took place in mid-October, was part of the SNF Project's mission to consolidate, manage and store all on-site spent fuel in one location on Hanford's central plateau.

"We're glad to have completed this move safely and efficiently," said Roger McCormack, site-wide SNF manager for Fluor Hanford. "Although this fuel represents just a small fraction of Hanford's SNF, its movement is another step in the material consolidation process."

The research fuel joins five loads of light-water-reactor fuel from the 324 Building that is now stored in the Interim Storage Area.

The fuel movement was accomplished by a team of riggers, crane operators, teamsters, nuclear chemical operators, health physics technicians and others assigned to the SNF Project. Personnel from the Fast Flux Test Facility, Hanford Site Operations and Hanford Site security also participated.

TRIGA Reactor spent nuclear fuel arrives at the 200 East Interim Storage Area on Oct. 15 in a conical cask overpack (above). It's placed inside the white cylindrical "Rad-Vault" for safe storage (below).

From TRIGA Reactor

The majority of the fuel recently moved to the Interim Storage Area is from a neutron radiography facility known as the Training, Research and Isotope (Production), General Atomics (TRIGA) research reactor, a small unit that operated in Hanford's 308 Building from the late 1970s until 1986. The TRIGA Reactor operated for 13 years during the facility's mission to produce and test fuels and materials for FFTF development. It performed neutron radiography testing on fuel pellets and pins, irradiated materials at low levels and provided reactor operator training. The fuel was removed from the reactor in the early 1990s and has been stored in Hanford's 400 Area since that time.

Continued on page 2.

Research-generated spent fuel moved, cont.

The fuel's curie content (a measure of radioactivity) is much less than the spent fuel being managed in Hanford's K Basins. The TRIGA fuel totals about 454 curies, less than the curie load of one average N Reactor fuel assembly now stored in the K Basins.

The TRIGA fuel is stored inside a "Rad-Vault" enclosure for environmental protection, supplemental shielding and resistance to natural phenomena. The Rad-Vault is a concrete, vertical cylinder with steel reinforcement.

Additional fuel coming

The 200 Area Interim Storage Area, about a quarter of a mile west of the Canister Storage Building, consists of three reinforced concrete storage pads and one compacted gravel storage pad inside a chain-link fence. In addition to the TRIGA fuel and the light-water-reactor fuel, the storage area will ultimately hold about 11 metric tons of FFTF spent fuel that is scheduled for relocation between 2003 and 2005. All such fuel will be stored in the Interim Storage Area in licensed casks.

Along with the TRIGA, FFTF and light-water-reactor fuel and the large collection of spent fuel in the K Basins, Hanford's SNF Project is charged with managing two other collections of spent fuel. Seventy-two large assemblies of fuel from the Shippingport Reactor in Pennsylvania, which have been in wet storage in Hanford's T Plant, are being dried and moved into the Canister Storage Building.

Additionally, as small amounts of spent fuel from Hanford's single-pass reactors along the Columbia River are discovered in the course of reactor cleanout, they are transferred on an as-needed basis into the K East Basin to be processed with the existing K Basins fuel.

"The fuel consolidation work we are doing is one of the most visible, tangible steps in implementing the DOE-RL plan for material consolidation," said McCormack. "It's satisfying to be a part of something that succeeds step by step and changes for the better every month." ■